

DETAILED ACTION

35 U.S.C. 102 Rejection

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 2 are rejected under 35 U.S.C 102(b) as being anticipated by Sugimoto (PGPUB NO. 20040147680).

3. Regarding claim 1, Sugimoto teaches a method for producing a powder obtained by pulverization [0010] a thermoplastic elastomer composition [005, line 3], wherein pulverization is performed by shearing action of a fixed blade and a rotating blade [0066].

4. Regarding claim 2, Sugimoto teaches the thermoplastic elastomer composition comprises an acrylic block copolymer [0016, lines 11-13].

35 U.S.C. 103 Rejection

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 4151

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:
 1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sugimoto (PGPUB NO. 20040147680).
8. Regarding claim 3, Sugimoto teaches 0.1 to 10 parts by weight of at least one selected from the group consisting of calcium carbonate, talc, kaolin, silicon dioxide, fatty acid amides, fatty acid esters and metal soaps is added to 100 parts by weight of the composition comprising the acrylic block copolymer, which reads on the claimed range [0073].
9. Sugimoto does not teach adding the compound externally to the acrylic block copolymer before pulverization. Rather, Sugimoto teaches blending the one selected compound with the acrylic copolymer after pulverization [0074]. However, changing the order in which the compound is added does not produce significantly different results; adding after pulverization would result in less adhesion between particles. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sugimoto's method by adding the one selected compound before pulverization instead of after, for the benefit of preventing agglomeration between particles to yield a thermoplastic elastomer with good fluidity.

Art Unit: 4151

10. Claims 4 and 5 are rejected under 35 U.S.C. 103(s) as being unpatentable over Sugimoto, in view of Petereit et al. (US Pat No. 657655).

11. Regarding claim 4, Petereit et al. teaches the acrylic block copolymer is a block copolymer consisting of 30 to 80% by weight of an acrylic polymer block and 70 to 20% by weight of methacrylic polymer block, wherein the ranges read on the claimed range [0017].

12. Regarding claim 5, Petereit et al. teaches the acrylic polymer block is a block formed by polymerization [0022, lines 1 and 2] of a monomer having at least one monomer selected from the group consisting of n-butyl acrylate, ethyl acrylate, 2-methoxyethyl acrylate and 2-ethylhexyl acrylate [0019, line 4], while the methacrylic polymer block is a block formed by polymerization [0022, lines 1 and 2] of a monomer having methyl methacrylate as its principal component, wherein claimed 70% of methyl methacrylate would render it a principal component [0019, line 3].

13. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the polymers of Petereit et al. using Sugimoto's method of producing a powder molding material because the method of Sugimoto would provide powders sought by Petereit et al.

14. Claims 6 and 7 are rejected under 35 U.S.C. 103(s) as being unpatentable over Sugimoto, in view of Haseyama et al. (PGPUB 20020193459).

15. Regarding claim 6, Haseyama et al. teaches the composition, wherein the composition is a urethane-based thermoplastic elastomer that may contain 50% by weight or more [0156, line 2] of an acrylic thermoplastic elastomer [0157, line

Art Unit: 4151

4], comprises 0.01 to 40 parts by weight of calcium carbonate powder mixed with 100 parts by weight of the composition, which reads on the claimed range [00237, line 1].

16. Note that Sugimoto teaches the use of fillers [0058], which reads on the use of calcium carbonate as a filler as disclosed by the applicant. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the amount of calcium carbonate disclosed by Haseyama et al., which is sufficient enough to serve as filler for the benefit of increasing the softening point.

17. Regarding claim 7, Haseyama et al. teaches the composition comprising the acrylic block copolymer comprises 0.1 to 10 parts by weight of silicone oil mixed with 100 parts by weight of the acrylic block copolymer [184, line 1].

18. Note that Sugimoto teaches the use of dimethylsilicon oil [0071, line 2], which reads on the use of silicone oil as disclosed by the applicant. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the amount of silicone oil disclosed by Haseyama et al., which is sufficient enough for the benefit of preventing adhesion between particles.

19. Claim 8 is rejected under 35 U.S.C. 103(s) as being unpatentable over Sugimoto, in view of Oouchi (Pat No. JP407041561A).

20. In the same field of endeavor, regarding claim 8, Oouchi teaches water is supplied during pulverization [0017, line 1].

Art Unit: 4151

21. Oouchi does not teach the amount of water added to the composition comprising the acrylic block copolymer that is supplied during pulverization. However, both Oouchi and the applicant use water for the same purpose of preventing softening while pulverizing [0013, lines 4-6] similar species that share the similar physical properties. For example, both Oouchi and the applicant use acrylic thermoplastic polymers, giving them similar softening points. Oouchi also forms 2-3 μ m particles [0014, line 4], which reads on the applicant's disclosure of 500 μ m or less. Thus, although Oouchi does not disclose a specified amount, the method is known and the amount of water is expected to overlap with the applicant's claim in order to provide a cooling effect and prevent softening of the polymer.

22. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Sugimoto by adding water in an amount expected to overlap with the applicant's claim due to a common species with similar physical properties, for the benefit of preventing softening during pulverization to yield a more fluid powder.

Conclusion

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELIZABETH ENG whose telephone number is (571)270-7743. The examiner can normally be reached on Monday to Thursday from 8am to 5pm and every other Friday 8am to 5pm.

Art Unit: 4151

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Angela Ortiz, can be reached at (571) 272-1206. The fax phone number for the organization where this application or proceeding is assigned is 571-270-8743.

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E.E.

*/Angela Ortiz/**Supervisory Patent Examiner, Art Unit 4151*